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## **A New Centipede from Illinois (Chilopoda; Geophilomorpha: Geophilidae)**

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The first species of *Brachygeophilus* found in the eastern United States was described by Crabill in 1949. Previously Chamberlin described several species from the western part of the country. The following species is the first member of this genus to be taken in the middle west.

### ***Brachygeophilus parki* new species**

*Color* is waxy yellowish-white in the -natural state with the cephalic plate being dark yellow tending toward orange. In preservative the body takes on a brownish-red tint while the head remains dark yellow.

*Antennae* are relatively long, ranging from 3.0 to 4.2 times the length of the cephalic plate. Antennae filiform, first article short, subquadrate, wider than the succeeding articles. Articles 2, 3, 4, 5 subrectangular ; 6, 7, 8, 9 obconical ; 10, 11, 12, 13 globular ; last article ovate. Proximal articles are sparsely beset with long setae which become denser distally. Last segment contains sensory papillae on the lateral and anterior surfaces.

*Cephalic plate* is longer than wide. For ratios of the series see Table 1. Entire surface is areolate. Dorsal surface beset with long setae. One pair of setae located behind the inner corner of the first antennal articles. Behind these is a transverse row containing 7 setae. The remainder of the plate has scattered setae arranged in uneven rows.

*Clypeus* has a distinctly areolate surface. The clypeus is wider than long and is clearly delineated by a pale, clear lateral line on either side.

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*Clypeal area* is barely distinct ; somewhat paler and more finely areolate than the surrounding surface. In this area are 4 setae arranged in pairs; one pair anteriorly in the center of the area and one pair at the posterior margin. In front and slightly lateral to the clypeal area are two post-antennal setae, located mesad of each antennal insertion.

*Labrum* is tripartite ; middle part containing 3 strongly sclerotized, triangular teeth (Fig. 1, A) . Lateral portions contain 6 to 9 membranous pectinations.

*First maxilla* has an areolate syncoxite. Four lappets are present ; one pair on the outer corners of the syncoxite and one pair on the basal outer margin of the telopodites.

*Second maxilla* also has an areolate syncoxite. Anterior margin of the syncoxite beset with a row of short setae. Telopodite armed with usual claw. Distal article beset with 6 or 7 long setae.

*Prehensors* when closed do not quite reach the anterior margin of the cephalic plate. Tarsus has a short, pointed denticle at base. The other articles are unarmed. Lateral and ventral surfaces sparsely beset with long setae. One circumferential row of setae located at base of claw. Poison gland situated in the mediolateral part of the trochanteroprefemur. Prosternum lacks chitin lines.

*Tergites* are rectangular in shape with outer corners somewhat rounded ; bisulcate, with the furrows more pronounced in the anterior tergites than in the posterior. Each tergite has 3 transverse rows of setae.

*Stigmata* are distinctly round. The first 5 pairs are approximately the same size. The remainder then become gradually smaller in diameter.

*Sternites* each have 3 longitudinal sulci. The furrows are wide and well pronounced in the anterior sternites ; becoming less so posteriorly. A carpophagus structure is found on the forward surface of the anterior sternites. Depending upon the size of the organism, it is first found on the second to the fourth sternites, and continues until the twelfth to the fifteenth (Table 1 ) . The larger the specimen, the greater the number of carpophagus structures. Split intercalary sternites are present in the anterior portion of the body. Inserted within the split portion of each of these is a sclerotized tubercle which extends posteriorly from the preceding sternite. The ultimate sternite is wide and semicircular in shape ( Fig. 1, B ) . It contains large numbers of short setae which become dense along the posterior margin. Scattered among these are a few large setae.

*Body length.* Type specimen has a total length of 22.5 mm. Allotype has a length of 26.0 mm. As can be seen in Table 1 the range of adult size is from 20.0 mm. to 26.0 mm.

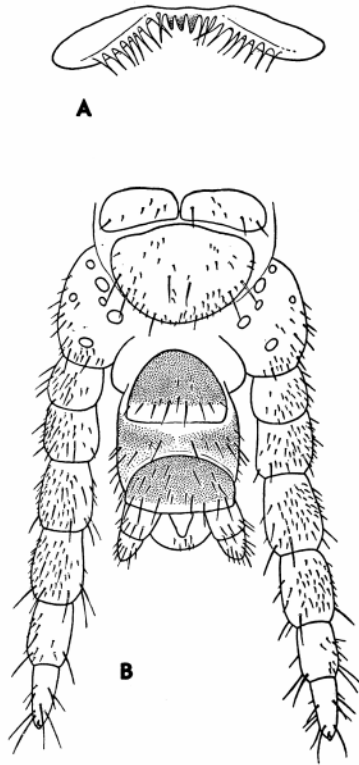


Figure 1. *Brachygeophilus parki* new species.

A. Labrum, ventral view. B. Genital-anal region of male holotype, ventral view.

*Legs* are six-segmented. Number of pairs of legs either 43 or 45. Males seem consistently to have 43 pairs whereas females have either 43 or 45 pairs (Table 1). The first pair of legs is shorter than the succeeding. Ultimate legs armed with a small claw. Male ultimate legs are slightly tumescent and densely beset with short setae on the ventral and lateral surfaces (Fig. 1,B). Female ultimate legs are non-crassate and sparsely beset with longer setae than those of the male type.

*Ultimate leg coxae.* In adult specimens the number of coxal pores on each coxa ranges from 6 to 8 (Table 1) . Again the variation seems to be related to the size (maturity ?) of the individual. The male holotype has 6 on each coxa (Fig. 1, B) .

Table 1. *Brachygeophilus parki* new species. A comparison of some of the diagnostic features and morphological parameters of the series collected. BL—body length; PLGS—pairs of legs; ANL—antenna length; HL—head length; HW—head width; CPST—sternites with carpophagus structure; PRST—sternites with posterior prolongations; CXP—coxal pores. Specimen No. 1—Holotype; No. 2—Allotype.

| Speci-<br>men | Sex            | BL<br>(mm.) | PLGS | ANL<br>(mm.)   | HL<br>(mm.) | HW<br>(mm.) | CPST | PRST | CXP            |
|---------------|----------------|-------------|------|----------------|-------------|-------------|------|------|----------------|
| 1.            | ♂              | 22.5        | 43   | 2.26           | 0.56        | 0.50        | 2-15 | 2-15 | 6+6            |
| 2.            | ♀              | 26.0        | 45   | 2.68           | 0.70        | 0.64        | 2-15 | 2-14 | 7+8            |
| 3.            | ♀              | 24.0        | 45   | 1.98           | 0.56        | 0.50        | 2-15 | 2-14 | 8+7            |
| 4.            | ♀              | 20.5        | 45   | 2.26           | 0.56        | 0.50        | 2-14 | 2-14 | 6+7            |
| 5.            | ♀              | 24.0        | 43   | 2.26           | 0.62        | 0.56        | 2-15 | 2-16 | 7+7            |
| 6.            | ♂              | 14.5        | 43   | 1.42           | 0.42        | 0.36        | 2-15 | 2-13 | 5+5            |
| 7.            | ♂              | 14.5        | 43   | ? <sup>1</sup> | 0.42        | 0.36        | 2-14 | 2-12 | 5+5            |
| 8.            | ♀              | 14.5        | 43   | ? <sup>1</sup> | 0.42        | 0.40        | 2-13 | 2-13 | 5+5            |
| 9.            | ♂              | 13.0        | 43   | 1.26           | 0.42        | 0.36        | 3-12 | 2-13 | 4+4            |
| 10.           | ? <sup>2</sup> | 14.5        | 43   | 1.26           | 0.42        | 0.36        | 4-14 | 2-14 | ? <sup>2</sup> |
| 11.           | ♂              | 13.0        | 43   | 1.26           | 0.42        | 0.36        | 3-13 | 2-13 | 5+5            |
| 12.           | ♀              | 13.0        | 45   | 1.26           | 0.42        | 0.36        | 4-13 | 2-12 | 6+6            |
| 13.           | ♀              | 9.0         | 43   | ? <sup>1</sup> | 0.36        | 0.30        | 4-13 | 3-12 | 4+4            |
| 14.           | ♀              | 16.0        | 45   | ? <sup>1</sup> | 0.42        | 0.36        | 4-13 | 2-12 | 6+6            |
| 15.           | ♂              | 13.0        | 43   | ? <sup>1</sup> | 0.42        | 0.36        | 4-12 | 2-12 | 6+6            |
| 16.           | ♂              | 9.5         | 43   | 1.00           | 0.36        | 0.28        | 4-12 | 2-12 | 4+4            |
| 17.           | ♂              | 11.0        | 43   | ? <sup>1</sup> | 0.36        | 0.30        | 4-13 | 2-13 | 4+4            |

?<sup>1</sup> Antennae not measurable.  
?<sup>2</sup> Genital region crushed.

*Genital region.* Pregenital segment is completely separated from the genital segment by pleurae which are completely fused along the midventral axis (Fig. 1,B) . Pregenital segment has a single transverse row of setae which increase in length toward the midventral axis. Pleurae are beset with long setae laterally which gradually become sparse toward the midventral axis. Genital segment of holotype contains the aedeagus in a sheath situated on the medial posterior surface. Flanking this structure are the pair of two-jointed gonopods. Each is beset with long acicular setae. Two anal pores are present.

*Holotype* male, length 22.5 mm. Collected on April 17, 1954 in a Stage IV log by members of the Northwestern University ecology class

#### Auerbach: New Centipede from Illinois

under the supervision of Professor Orlando Park in whose honor this species is named. The site of collection is in Carle Woods, a red oak-sugar maple-basswood forest located on the Desplaines river near the city of Desplaines, Cook County, Illinois. On this date the type and two paratypes were taken. Four weeks later 14 additional paratypes were collected at the same site.

Of tangential interest is the fact that this forest has been collected intensively by the author over a period of four years without taking this species. In addition, ecology class material for the past eight years has been examined by the author with similar lack of results. This is a further indication of the need for more thorough centipede collecting, even in the so-called well known areas of this country.

*Allotype* female, length 26.0 mm. Collected by the author on May 15, 1954 together with 13 paratypes. Same as the holotype with the following exceptions. Forty-five pairs of legs instead of 43 ; and coxal pores of ultimate legs 7 and 8 in number. The holotype, allotype, and the 15 paratypes are in the collection of the author.

*Brachygeophilus parki* is most closely related to *B. rupestris* Crabill 1949. It differs from the latter in the number of pairs of legs, having 43-45, whereas *rupestris* has 37-39. It has more pores on the ultimate leg coxae, 6 to 8, compared to 4 in *rupestris*. *B. parki* has the carpo-phagus structure on sternites 2-15, whereas *B. rupestris* has the structure on sternites 2-10.

#### Literature Cited

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1949 A new centipede from the eastern United States (Chilopoda : Geophilidae). Ent. News, vol. 60, no. 8, p. 210-213.

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